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Some notes on Hypericum.—In the BOTANICAL GAZETTE for April and May, 1886, was published my revision of North American Hypericaceæ; while in the number for October, 1886, were published further notes and a description of a new species, *H. lobocarpum* Gattinger, from the "oak-barrens" of W. Tennessee and probably W. Mississippi. A few additional notes are made at this time to record our present knowledge of this group.

The interesting new species H. lobocarpum was found growing abundantly near Lake Charles, Louisiana, in July and August, 1888, by Prof. W. W. Daves. The range of this species is therefore extended over the Lower Mississippi region, from Tennessee southward. It should be looked for in E. Arkansas.

I am informed by Dr. Watson that during Dr. Gray's last visit to Paris, in 1887, he re-examined the types of Hypericum there, and states positively that Lamarck's H. cistifolium is neither *H. opacum* Torr. & Gray, as he first thought, nor *H. nudiflorum* Michx., as I considered it in the revision, but *H. sphærocarpum* Michx. Therefore *H. sphærocarpum* Michx. must become *H. cistifolium* Lam., and H. cistifolium of my revision, not Lamarck, becomes again *H. nudiflorum* Michx.

Another correction may as well be made. Under *H. opacum* Torr. & Gray, in the revision, H. cistifolium is quoted as a synonym, with the authority "Watson, Bibl. Index. Polypet. 125, not Lam." This authority should be changed so as to read "Torr. & Gray, Fl. i. 674, and later authors, not Lam."—JOHN M. COULTER, *Crawfordsville, Ind.*

Sterility of violets.—It is a curious fact that with the remarkable arrangements for cross-pollination in numerous species of violets they rarely cross-fertilize. In order to assure myself of this conclusion, I removed a number to my garden several years ago. I have V. sagittata, V. pedata, var. bicolor, V. striata, V. Canadensis, V. palmata, var. cucullata, under observation, and, with the exception of one plant of the latter, I have never had a petaliferous flower bear seed. This one was growing on a very dry rockery. They all bear fruit abundantly from cleistogene flowers. The perfect flowers, on my grounds, are not cross-fertilized by insect or any other agency. They are not fertilized at all. Though environment (whatever that may mean) has undoubted influence on determining the development and functional powers of stamens and pistils, I incline to the belief that the same facts will be found generally elsewhere.—THOMAS MEEHAN, *Germantown, Penn.*

Dionæa muscipula.—I have had under observation a flowering plant of *Dionæa muscipula* Ellis, and the following notes may be of interest: Of the seven flowers of the irregular umbel, the uppermost opened first. The ten stamens were mature and copiously discharging pollen, while the style was small, and leaning towards one side, the stigmas undeveloped. Thirty-six hours later the fringed stigmas unfolded, and spread out to receive pollen. This was repeated in the case of each flower, the time varying slightly. The flowers remain open three days, unaffected by light or shade; then the pure white petals begin to roll up like a scroll from the outermost edge inwards, inclosing the five stamens which grow opposite the petals, and leaving the others, which are opposite the sepals, still exposed. After a time, the sepals fold inwards over the fertilized ovary. The pollen is (as in the Heath family) compound, composed of four united grains, each one having spine-like projections, and showing thin oval spots on the surface. I cross-fertilized the flowers, and they give evidence of bearing seed.—CONSTANCE G. DUBOIS, *Waterbury, Conn.*

Observations upon barberry flowers.—In the common barberry (*Berberis vulgaris* L.) the anthers of the sensitive stamens dehisce by means of uplifted valves in such a manner that the pollen adhering to the inner surface of the valve (now turned inward) is brought against the rim of the large discoid stigma when the stamen is irritated. This position is secured by the valvular suture extending to the top upon the outside of the stamen (the whole valve being lateral), then by contraction the valve is folded inward and upward and the inner surface loaded with pollen is brought facing the pistil.

An examination of the stigma shows that there is a narrow belt of long stiff hairs surrounding the whole rim of the cup-shaped stigma. These hairs are abundantly provided with an adhesive substance, and the cushion or belt of hairs occupies that portion of the top of the style against which the anthers come when they bevel inward, and in an ordinary flower this zone is soon covered over with adhering pollen. All of the upper surface of the discoid stigma is covered with short papillæ as is also the deep cleft which extends downward into the style. In the examination of a large number of stigmas not a single pollen grain was found germinated in the brush of hairs, but above this, and of course at a point out of reach of the stamens of that flower, pollen tubes were not infrequent.

Paper sacks were placed upon branches bearing racemes of unopened flowers, and all insects thereby excluded. The blossoms were examined from time to time, and in all cases the pollen was abundant upon the brush, but none could be seen upon the stigma proper. Out of thirty racemes thus covered only four formed any fruit, and three of these berries were upon a branch over which the sack was defective, having a hole at the top. The other case may be a case of close fertilization, or an insect possibly worked its way into the sack from its base, where it might have been imperfectly folded around the stem. The flowers not covered by sacks upon neighboring branches or shrubs fruited heavily. The observations with microscope and the actual field experiments suggest that the brush is only a means for wide fertilization.—BYRON D. HALSTED, *New Brunswick, N. J.*